

DESCRIPTION OF TABLES AND CHARTS.

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Table I gives, for about 137 Weather Bureau stations making two observations daily and for about 31 others making only one observation, the data ordinarily needed for climatological studies, viz, the monthly mean pressure, the monthly means and extremes of temperature, the average conditions as to moisture, cloudiness, movement of the wind, and the departures from normals in the case of pressure, temperature, and precipitation, the total depth of snowfall, and the mean wet-bulb temperatures. The altitudes of the instruments above ground are also given.

Table II gives, for about 2,800 stations occupied by voluntary and other cooperating observers, the highest maximum and the lowest minimum temperatures, the mean temperature deduced from the average of all the daily maxima and minima, or other readings, as indicated by the numeral following the name of the station, the total monthly precipitation, and the total depth in inches of any snow that may have fallen. When the spaces in the snow column are left blank it indicates that no snow has fallen, but when it is possible that there may have been snow of which no record has been made, that fact is indicated by leaders, thus (. . .).

Table III gives, for all stations that make observations at 8 a. m. and 8 p. m., the four component directions and the resultant directions of the wind based on these two observations only and without considering the velocity. The total movement for the whole month, as read from the dial of the Robinson anemometer, is given for each station in Table I.

Table IV gives the total number of stations in each State from which meteorological reports of any kind have been received, and the number of such stations reporting thunderstorms (T) and auroras (A) on each day of the current month.

Table V gives a record of rains whose intensity at some period of the storm's continuance equaled or exceeded the following rates:

Duration, minutes.....	5	10	15	20	25	30	35	40	45	50	60	80	100	120
Rates per hour (ins.).....	3.00	1.80	1.40	1.20	1.08	1.00	0.94	0.90	0.86	0.84	0.75	0.60	0.54	0.50

In the northern part of the United States, especially in the colder months of the year, rains of the intensities shown in the above table seldom occur. In all cases where no storm of sufficient intensity to entitle it to a place in the full table has occurred, the greatest rainfall of any single storm has been given, also the greatest hourly fall during that storm.

Table VI gives, for about 30 stations furnished by the Canadian Meteorological Service, Prof. R. F. Stupart, director, the means of pressure and temperature, total precipitation and depth of snowfall, and the respective departures from normal values, except in the case of snowfall.

Table VII gives the heights of rivers referred to zeros of gages; it is prepared by the Forecast Division.

NOTES EXPLANATORY OF THE CHARTS.

Chart I, tracks of centers of high areas, and Chart II, tracks of centers of low areas, are prepared by the Forecast Division. The roman numerals show number and chronological order of highs (Chart I) and lows (Chart II). The figures within the circles show the days of the month; the letters *a* and *p* indicate, respectively, the observations at 8 a. m. and 8 p. m., seventy-fifth meridian time. Within each circle is also given (Chart I) the highest barometric reading and (Chart II) the lowest barometric reading at or near the center at that time, and in both cases as reduced to sea level and standard gravity.

Chart III.—Total precipitation. The scale of shades showing the depth of rainfall is given on the chart itself. For isolated stations the rainfall is given in inches and tenths,

when appreciable; otherwise, a "trace" is indicated by a capital T, and no rain at all by 0.0.

Chart IV.—Percentage of clear sky. The average cloudiness at each Weather Bureau station is determined by numerous personal observations during the day. The difference between the observed cloudiness and 100, it is assumed, represents the percentage of clear sky, and the values thus obtained have been used in preparing Chart VII.

Chart V.—Surface temperatures; maximum, minimum, and mean of these. Lines of equal monthly mean temperature in red; lines of equal maximum temperature in black; and lines of equal minimum temperature (dotted) also in black.

Chart VI. Isobars and isotherms at 10,000 feet. The mean monthly station pressure for each station has been reduced to the 10,000-foot plane by entering Table 53, pages 789-988, Volume II, Annual Report of the Chief of the Weather Bureau, 1900-1901, with the temperature argument, *t*, corresponding to θ_2 , and correcting the station pressure by the reduction $B_2 - B$ after applying the plateau correction, $C \cdot \Delta \theta \cdot H$, and the corrections for *e* and ΔA , the argument *t* being the mean monthly air temperature. This reduction is fully described in the Annual Report of the Chief of the Weather Bureau for 1900-1901, Volume II, pages 772 to 786. The reduction for obtaining B_2 may also be found by using gradients from the station pressure to the height of 10,000 feet, as set forth on pages 18 and 19 of the MONTHLY WEATHER REVIEW for January, 1902.

The isotherms on the 10,000-foot plane have been computed by using the gradients for temperature for each month and station as shown by Table 48, Chapter VIII, Volume II, Report of the Chief of the Weather Bureau, 1900-1901.

Chart VII.—Isobars and isotherms at 3500 feet. The pressure and temperature data entered on this chart are found by the method described for similar data on the 10,000 foot plane.

Chart VIII.—Isobars and isotherms at sea-level and resultant surface winds. The pressures have been reduced to sea level and standard gravity by the method described by Prof. Frank H. Bigelow on pages 13-16 of the REVIEW for January, 1902. The pressures have also been reduced to the mean of the twenty-four hours by the application of a suitable correction to the mean of the 8 a. m. and 8 p. m. readings, at stations taking two observations daily, and to the 8 a. m. or 8 p. m. observation, respectively, at stations taking but a single observation. The diurnal corrections so applied will be found in Table 27, Volume II, Annual Report of the Chief of Weather Bureau, 1900-1901, pp. 140-164.

The isotherms on the sea-level plane have been constructed by means of the data summarized in chapter 8 of the Annual Report of the Chief of the Weather Bureau for 1900-1901, Volume II. The correction $t_0 - t$, or temperature on the sea-level plane minus the station temperature, as given by Table 48 of the above report, is added to the observed surface temperature to obtain the adopted sea-level temperature.

The resultant wind directions are computed from observations at 8 a. m. and 8 p. m. daily. The resultant durations are shown by figures attached to the arrows.

IX.—Isobars at sea-level; surface isotherms; resultant winds. Chart X.—Hydrographs for seven principal rivers of the United States, prepared by the Forecast Division.

Chart XI.—The total snowfall. This is based on the reports from regular and voluntary observers, and shows the depth of the snowfall during the month in inches. In general, the depth is shown by lines inclosing areas of equal snowfall, but in special cases figures are also given.

Chart XII.—Depth of snow on ground at end of month. When there is no snow the last two charts are omitted.